

**ABSTRACT OF THE DISCLOSURE**

The rotation sensor (10) has a cylindrical first rotor (11) made of an insulating magnetic material, having conductor layers (11a) arranged circumferentially, the first rotor being attached to a rotating first shaft (5a) at a predetermined axial position; a fixed core (12) having an exciting coil (12b), the core being fixed to a fixing member with a space secured in the axial direction with respect to the first shaft; a second rotor (13) having nonmagnetic metal bodies (13b) arranged circumferentially to oppose the conductor layers respectively, the second rotor being attached to a second shaft located adjacent to and rotating relative to the first shaft (5a) and being located between the first rotor (11) and the fixed core (12); and oscillating device connected to the exciting coil (12b), the oscillating device transmitting an oscillation signal of a specific frequency. The rotation sensor has rotation guides (11c,13c) for guiding rotation of the first and second rotors (11,13) respectively with respect to the fixed core (12).

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